

Claims

- [c1] A method of providing transgenic fish to the ornamental fish market, comprising the steps of: (a) obtaining an ornamental transgenic fish comprising one or more chimeric fluorescence genes positioned under the control of a promoter, wherein the transgenic fish expresses one or more fluorescent proteins encoded by the one or more fluorescence genes at a level sufficient such that said fish fluoresces upon exposure to one or more of a blue light, ultraviolet light or sunlight; and (b) distributing said fish to the ornamental fish market.
- [c2] The method of claim 1, further comprising displaying said transgenic fish under a blue or ultraviolet light.
- [c3] The method of claim 2, wherein the transgenic fish are displayed under an ultraviolet light that emits light at a wavelength selected to be optimal for the fluorescent protein or proteins.
- [c4] The method of claim 3, wherein the transgenic fish comprise a GFP and are displayed under an ultraviolet light that emits light at 365 nm.

- [c5] The method of claim 3, wherein the transgenic fish comprise a GFP and are displayed under an ultraviolet light that emits light at 395 nm.
- [c6] The method of claim 3, wherein the transgenic fish comprise a GFP and are displayed under a blue light that emits light at 488 nm.
- [c7] The method of claim 1, wherein the transgenic fish express a GFP.
- [c8] The method of claim 8, wherein the transgenic fish express an EGFP.
- [c9] The method of claim 1, wherein the transgenic fish express a BFP.
- [c10] The method of claim 9, wherein the transgenic fish express an EBFP.
- [c11] The method of claim 1, wherein the transgenic fish express a YFP.
- [c12] The method of claim 11, wherein the transgenic fish express an EYFP.
- [c13] The method of claim 1, wherein the transgenic fish express a CFP
- [c14] The method of claim 13, wherein the transgenic fish ex-

press an ECFP.

- [c15] The method of claim 1, wherein the transgenic fish expresses more than one color of fluorescent protein.
- [c16] The method of claim 1, wherein the promoter is a tissue specific promoter.
- [c17] The method of claim 16, where the promoter is a skin specific promoter.
- [c18] The method of claim 17, wherein the promoter is a zebrafish cytokeratin gene promoter.
- [c19] The method of claim 16, wherein the promoter is a muscle specific promoter.
- [c20] The method of claim 19, wherein the promoter is a zebrafish muscle creatine kinase gene promoter.
- [c21] The method of claim 19, wherein the promoter is a zebrafish myosin light chain 2 gene promoter.
- [c22] The method of claim 16, wherein the promoter is an eye specific promoter.
- [c23] The method of claim 16, wherein the promoter is a bone specific promoter.
- [c24] The method of claim 1, wherein the promoter is a ubiq-

uitously expressing promoter.

- [c25] The method of claim 24, wherein the promoter is a zebrafish acidic ribosomal protein gene promoter.
- [c26] The method of claim 1, wherein the promoter is an inducible promoter.
- [c27] The method of claim 26, wherein the inducible promoter is a hormone inducible promoter.
- [c28] The method of claim 26, wherein the inducible promoter is a heavy metal inducible promoter.
- [c29] The method of claim 16, wherein the transgenic fish expresses more than one fluorescent protein color.
- [c30] The method of claim 29, wherein the more than one fluorescent protein is expressed in the same tissue, to effect a new fluorescent color.
- [c31] The method of claim 30, where the transgenic fish expresses a GFP and a BFP.
- [c32] The method of claim 29, wherein the more than one fluorescent proteins are separately expressed in different tissues.
- [c33] The method of claim 32, wherein the transgenic fish expresses a GFP under the control of an eye specific pro-

moter.

[c34] The method of claim 32, wherein the transgenic fish expresses a BFP under the control of a skin specific promoter.

[c35] The method of claim 32, wherein the transgenic fish expresses a YFP under the control of a muscle specific promoter.

[c36] The method of claim 1, wherein the transgenic fish is a stable transgenic fish line obtained by a method comprising the steps of: (a) obtaining an ornamental transgenic fish comprising one or more chimeric fluorescence genes positioned under the control of a promoter, wherein the transgenic fish expresses one or more fluorescent proteins encoded by the one or more fluorescence genes at a level sufficient such that said fish fluoresces upon exposure to one or more of a blue light, ultraviolet light or sunlight; and (b) breeding the ornamental transgenic fish with a second fish to obtain offspring; and (c) selecting from said offspring a stable transgenic line that expresses one or more fluorescent proteins.

[c37] The method of claim 36, wherein the second fish is a wild type fish.

[c38] The method of claim 36, wherein the second fish is a

second transgenic fish.

- [c39] The method of claim 1 or 36, wherein the ornamental transgenic fish is a transgenic zebrafish, medaka, goldfish or carp.
- [c40] The method of claim 36, wherein the second fish is a zebrafish, medaka, goldfish or carp.
- [c41] The method of claim 1 or 36, wherein the ornamental transgenic fish is a transgenic koi, loach, tilapia, glassfish, catfish, angel fish, discus, eel, tetra, goby, gourami, guppy, Xiphophorus, hatchet fish, Molly fish, or pangasius.